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ABSTRACT

Reflection and notation in communications in the School Renewal Network, a national collegium of practitioners engaged in school reform activities, are examined in this paper. The network was designed to create an interactive knowledge base for school restructuring that would link educators in meaningful dialogue based on research and current practice. Primary data sources include records from seven selected network sessions, a survey of school-site coordinators, interviews with Mastery In Learning Project (MILP) participants, log file analysis, and network interaction analysis. Secondary data sources include an OERI researcher questionnaire and practitioner interviews, interviews with selected network participants, and other MILP documents. Findings indicate that the use of reflective, deliberative dialogue enhances participant empowerment; however, the network generally has not been used as an interactive tool or to meet student needs. The recommendation is made to incorporate indepth focus with the expanding scope of the knowledge base. Analysis of participant interchanges suggests that the network stimulates reflective and deliberative thought, but the data are inconclusive as to whether such interchanges are evidence of "wisdom of practice." Five figures and four tables are included. Appendices contain examples of practitioner papers. (33 references) (LMI)

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EXAMINING THE EVIDENCE:

REFLECTION AND NOTATION IN NETWORK COMMUNICATION

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Reflection, Knowledge, and Educational Reform

The nation's dissatisfaction with its schools, crystallized and given momentum by "A Nation at Risk" led to a series of legislated and largely structural "reforms" including raising standards, increasing accountability, and lengthening time in school. Yet, fundamental change and improvement has proven more illusive. A "second wave" of school reform (Michaels, 1988) calls for more fundamental school restructuring. Built upon the conviction that lasting and meaningful change must be developed by those closest to the learner (Bentzen, 1974; Carnegie Task Force on Teaching as a Profession; 1986, Goodlad, 1984) this reform agenda includes school and community-level decision making, participatory environments for students and faculties, personalization, flexible use of time and resources, and higher-level thinking and learning.

Today's school practitioners are increasingly challenged by competing demands imposed by diverse student needs and interests, expanded public expectations, declining resources, and continuing policy mandates from all levels of government. Consequently, "it is only the intelligent, moral, well-educated, and continually developing autonomous decision maker who can broker effectively among those legitimate, albeit competing demands" (Shulman, 1983, p. 502). These demands necessitate that educators access and interact with the knowledge bases which undergird the processes of learning and the practices of teaching and schooling.

It is increasingly evident that the "autonomous decision maker" cannot work in isolation, however. "Since what is held to be true by any individual or group is intrinsically incomplete, knowledge is a process of continuous

debate, dialogue, deliberation, and reasoning" (Shulman, 1989, p. 176). Professional collegiality and norms of collaboration and inquiry characterize the cultures of successful schools (Little, 1982; Rossman, 1985; Tye and Tye, 1984), and second-wave school reforms demand empowered professionals who engage collectively in informed deliberation (Maeroff, 1988). As practitioners interact in a knowledge-rich environment, they reflect, question, learn, multiply knowledge and increase their power to educate and change the institutions in which they work. Knowledge holds the power of enablement, psychological authorization, capability and rights for practitioners and students, alike (Thompson, 1989).

Reflection, knowledge, and educational reform are inextricably linked. Although much of the literature about reflection in teaching focuses on the individual, G. H. Mead, a contemporary of John Dewey, provides a significant perspective on the processes of change and reflectivity. In Mind, Self, and Society, Mead (1934) proposed that self-development is a function of social interaction through communication and reflective dialogue. Collegiality, as Shulman (1989) suggests, is necessary to overcome the bounds of individual rationality, to enable learning from experience, and make possible the transformation of schooling. Professional collegiality should exist, not only between colleagues in individual school buildings, but between educators in diverse settings whose separation precludes frequent face-to-face contact. The face-to-face interactions and deliberations of colleagues in the same building can be referred to as the "visible college." An "invisible college" is created when the collegium stretches across distances beyond the walls of a

given school. The invisible college can take the form of conferences, publications, correspondence and, recently, electronic networking (Shulman, 1989).

Computer networks and collaborative dialogue

Educational networking is a growing phenomenon for both students and educators (McAnge, 1990), but the research base on the collaborative potential of computer networks is not yet well-developed. The following section summarizes the emerging research base.

Characteristics of the software interface. Software characteristics (e.g., ease of use, indexing, windows, appending or proximal placement of related messages or documents) either enhance or diminish the potential for interaction and thus the reflective potential of networks (McCord, 1985; Murrell, 1983; West & McSwiney, 1989).

Familiarity of participants. Many of the basic human communication patterns appear to be reflected in computer conferencing. For example, communications are to the point and relatively devoid of greetings and courtesies in task-oriented environments where all participants know one another and are engaged in focused tasks (Murray, 1986). In contrast, in computer environments linking participants less well-acquainted and with less-focused tasks, users include the courtesies of conversation and simulate the intonation and gesture of face-to-face communication by using names, typing vocalizations, and symbolizing facial expressions with keyboard characters (Holmes, 1987).

Nature of communication task. In addition to software characteristics and familiarity, the nature of the communication task appears to influence the effectiveness of networking. Many of the initial studies of networking analyzed problem solving and decision making on and off computer. For focused problem solving tasks, computer conferencing may have a detrimental effect on thoroughness, relevance, and completeness of information sharing leading to inferior decision quality as compared with face-to-face communication (McCord, 1985; Smith 1986). The computer medium, on the other hand, seems well suited to practical information and idea sharing (Phillips & Pease, 1985; West & McSwiney, 1989) including information of high topical specificity (West & McSwiney, 1989).

Several qualities of computer conferencing may make it particularly appropriate for developing dialogue and reflective discourse among practitioners separated by distance and time differences. An obvious advantage of asynchronous computer networks is that they allow "distance" communication across a wide audience to occur nearly instantaneously while accommodating time lags. In their study of networking in a distance adult education course, Phillips and Pease (1985) found that the best interaction and frank exchange occurred in open forums in which participants were free to express ideas and feelings. West and McSwiney (1989) report that short and undeveloped communications (a common characteristic of many contributions) may actually facilitate the expressions and integration of different points of view into a discussion. They note that in face-to-face conversation, in contrast, ambiguities tend to be quickly resolved.

Time and access. Nearly all studies cite the importance of convenient access to computer hardware and time for communication tasks as essential for the success of computer networking.

Component of communication systems. Computer networks do not supplant other forms of communication and operate as part of broader communication systems. Murray (1986) conducted a longitudinal analysis of communication in a computer-rich office environment (in which time, access, and technological know-how were not detracting variables). She had access to all communication--telephone, face-to-face, correspondence, and computer communications of various forms (including the content of personal messages)--and found that all modes were utilized in specific situations. She concluded that communication could not be understood if any modes were excluded from analysis.

Use versus impact. The communication value of network interchange, and probably its potential for stimulating reflection, is difficult to judge by participation alone. Even in situations where time and access are not barriers (e.g., workstations are in individual offices or homes), network use is variable. In their analysis of the first year of a network linking science teachers, West and McSwiney (1989) reported that although 90% of the network participants considered the network a valuable resource, many were mainly readers, and did not participate in the dialogue.

Development over time. The collaborative and reflective potential of networks needs time to develop. As networks mature, participants tend to form electronic communities or collegiums which, in turn, facilitate

communication at greater depth and with more "risk." Toles (1981) studied interpersonal communication patterns in six national networks (ranging from mass systems to vernacular systems) and found that, over time, the two tended to merge, both developing pockets of community--"gemeinschaft" alternatives to our increasingly "gesellschaft" world. "Safe" interaction--factual, practical, and barren of questioning or challenging--is characteristic among users who don't know one another. For example, in the first year of the Science Teachers Network (West & McSwiney, 1989), a subgroup of participants with previous experience together exhibited longer message chains containing emotions, feedback, and reflections than the other participants.

Networking, collegial exchange, and school restructuring. In addition to linking educators with common tasks and facilitating distance education (e.g., Phillips & Pease, 1985), computer networking is increasingly being recognized as a tool for enhancing collaboration and collegiality. Bull, Harris, Lloyd, and Short (1989) describe the use of E-mail in university-school collaboration to enhance the teaching internship. Similarly, networking has been used to provide support for first year teachers (Merseth, 1991). Networks have been created to facilitate collaboration among educators engaged in similar educational endeavors such as the Science Teachers Network described by West and McSwiney (1989) and numerous others ranging from BreadNet, organized by the Bread Loaf School of English at Middlebury College, to the Educational Native American Network, organized by the Bureau of Indian Affairs (McAnge, 1990). The NEA Technology Committee charged the

organization with "planning to create interlinked, nationwide interactive networks for teachers" (NEA, 1989, p. 16).

Networking is also being promoted as a tool for restructuring schools. Harasim and Johnson (1986) describe the role of networking as a staff development tool to encourage collegial interaction around the change process. Gillingham (1990) asserts that computer networks can enhance teacher knowledge at preservice, induction, and inservice stages by providing teachers with an audience (which reduces the isolation of teaching) and a system of notation with which to share the wisdom of practice.

Newman (1990) warns educators to proceed with caution. He illustrates that the exigencies of time and access can enhance or undermine educational change. Where the tools of this technology--the terminals or keyboards--are not distributed convenient to practitioners in the schools and/or are located in defined "turf" (e.g., the office, the computer lab), the networking technology may simply strengthen existing modes of operation rather than encouraging collaboration and restructuring. Schrage (1990), however, expresses a great faith in the potential for collaborative technologies in all fields of endeavor. Noting that, contrary to our ethos of rugged individualism, most paradigm-shifting breakthroughs arise from collaboration rather than "intellectual Lone Rangerism," he encourages us to tap the collaborative potential of electronic technologies.

The School Renewal Network

The IBM-NEA School Renewal Network is a nationwide collegium of practitioners engaged in school reform activities, researchers, disseminators,

staff developers, and others interested in transforming schooling. The Network was designed to create an interactive knowledge base for school restructuring. By linking educators in meaningful dialogue based on research and current practice, the School Renewal Network strengthens learning communities within and across schools. Crucial to the Network's mission is transcending the conduit metaphor of "research to practice" or, for that matter, the "practice to practice" swapping of information. Although facilitating research use and information exchange are part of the Network's purpose, more essential to its vision are new expressions of knowledge--the making explicit (notation) of the practical wisdom that grows from the dialogue and reflective deliberation on the Network. Such new knowledge can grow from the interaction between the generalized knowledge of research and the specific, particularized knowledge of practitioners as well as from the reflective interactions between practitioners in very different contexts (cf. Gillingham, 1990).

The purpose of this investigation is to examine reflection and notation in communications on the School Renewal Network. Because various positions about reflection in teaching contrast in terms of its grounds, processes, content, preconditions, and demonstrations (Calderhead, 1989), it is necessary to clarify the interpretation used in this paper. I have drawn upon a broad conception of reflection described by Boud, Keough, and Walker (1985) in their book Reflection, Turning Experience into Learning. Reflective thinking, they contend, is purposeful, intentional, self-organized, and multi-faceted (involving

affect and cognition); and the reference point for reflection is some event or experience being grappled with, not merely remembered.

The questions which guided the investigation reported in this paper are:

* Does Network dialogue reveal reflective or deliberative thought? Is this developing over time?
* Is Network communication facilitating the notation of "the wisdom of practice"?

Method

Background information

The reader of this paper will require a basic understanding of the structure of the School Renewal Network and the networking software utilized. Please refer to the lead paper from the symposium (Castle, McClure, & Gillingham, 1991) for this information as well as information about data collection for surveys and log files.

Data sources

Primary data sources for this investigation include: (a) paper lists and paper print-outs for seven selected Network sessions (b) data from surveys of OERI-designated practitioners (Network coordinators at the school sites) and researcher-moderators (for each Network conference), (c) data summaries from end-of-project interviews with Mastery In Learning Project participants (unpublished Project documentation), (d) log-file analysis of Network activity, and (e) analysis of interaction from the first year of the School Renewal Network (see Castle, Livingston, Trafton, & Obermeyer, 1990). Secondary data sources include (a) summaries of OERI researcher questionnaire and OERI

practitioner interviews administered by the respective coordinator for each group, (b) personal interviews with selected Network participants, and (c) other data from Mastery In Learning Project documentation files.

Data Reduction and Analysis

Content analysis of Network papers. To analyze patterns of notation and evidence of exchange, deliberation, and reflection, I organized and examined print-outs of papers from seven Network sessions in six conferences. ("Conferences" are the large categorical headings which circumscribe topical "sessions" into which the papers are placed.) In a previous study (Castle, Livingston, Trafton, & Obermeyer, 1990), we reported a content analysis of all Network paper activity from four separate month-long periods (one per quarter) during the first year of the Network. That sample enabled us to investigate and illustrate change in Network activity over time. (The conference and session structure had been revised during the first year; thus, it was not possible to trace a given conference/session across time.) Because of the vast increase in Network activity during its second year and our desire to trace, more closely, the content and nature of discussion over the year, I selected for analysis six sessions from six different conferences. (The seventh session was added because it had evolved from one under investigation.)

As a regular observer of the Network, it appeared to me that differences in Network dialogue might be related to the categorical nature of the session and the characteristics of its participants. These observations were corroborated by comments in practitioner and researcher questionnaires.

Types of information and communication are differentially valued by different users (within and across user types). Some participants join only their assigned conferences and sessions, while others monitor all Network activity. Participants seem to vary in the manner of interaction and the value they place on different types of participation (information sharing, quick tips, deliberative discussion, critical reflection, and so on). In particular, researcher-moderators appeared to vary in their primary manner of response and the degree to which they have "gone native."

The six sessions were selected to represent one or more contrasts in the following (not mutually exclusive) criteria: participant satisfaction, level of paper activity, primary researcher-moderator "style," and evolution of special interest "groups" (in one case leading to the establishment of the seventh session).

Within each session analyzed, papers were coded by user category, paper category, content, and linkage to previous papers/conversation. User categories included practitioners (P), researcher-moderators (R), NEA staff and consultants including the practitioner's coordinator (S), and others including IBM personnel and parents (O). Paper categories included requests or questions for specific information or assistance (R/Q); information provided in the form of resources (Ir), experiences (Ie), or perspectives (Ip); discussion and deliberation, often including open-ended questions to stimulate dialogue (D); and a miscellaneous category which included misplaced papers, courtesy papers (e.g., welcomes, goodbyes, thank-yous . . .), and papers referring to

other sessions (M). Most papers received a single code, but some were given multiple codes if they clearly fulfilled multiple functions.

Paper content was classified using a summary descriptor. In many instances the descriptors mirrored terms used in the title or key words and served primarily as an aid in tracing conversation and examining notation in substantive strands.

Conversation linkages were identified on the paper lists and tallied by length for each session. Node-link diagrams were constructed to represent the patterns of interaction in extended conversations.

Role of other data sources in analysis. Patterns and contrasts from the primary and secondary data sources were compared to corroborate, modify, and clarify the interpretation. Statements were selected from participant interviews and surveys to exemplify the interpretations derived from the content analysis.

Results and Interpretation

Network Conversation

The content analysis of Network conversation is summarized in four tables. Table 1 charts the number of papers sent in each session during the 12 month time period and indicates the source of these papers by user category. Table 2 charts the paper activity in each session by substantive category. Table 3 illustrates the prevalence of explicit dialogue or conversation by charting the number of conversations in each session by length of conversation. Table 4 presents the major strands of conversation for each session.

Insert Tables 1, 2, 3 and 4 about here

Network participation. Table 1 illustrates that, of the sessions analyzed, practitioners account for 50% of the activity, researcher-moderators for 35%, and staff for 14%. This represents a significant change from the first year of Network activity in which researcher participation was minimal. (In January 1989, practitioners accounted for 61%, staff 33%, and researchers only 3%.) This change is an indication of progress toward the Network's mission to link research and practice. It may also reflect the value of OERI-supported structures and activities.

> *I think the interaction overall is quite high and good. I suspect, however, that 20% of the researchers and 10% or less of the practitioners account for over 90% of the interaction. If that is true, isn't that interesting? It's about the same as the 10/90 interaction rule found in face-to-face groups.* (Survey, researcher-moderator)

> *I feel there is a varied interchange of info and many "from the educational heart questions coming from practitioners--plus a substantial amount of resource sharing (i.e., meeting, articles, books). But I don't see the VARIETY in WHO responds--some "big and often" users vs. some "seldom" users.* (Survey, practitioner)

The issue of participation is further compounded: Since users are defined by site (computer workstation), the data provide definitive information about "site" activity only, not about the number of people involved at a given site. The following statements reflect contrasts in within-site participation:

> *I've been told by two school people that they believe the most use is by designated computer reps; that others in the building use the computer and the ideas rarely, if at all.* (Survey, researcher-moderator)

The computer basically distracts us. (Interview, teacher)

About 1/4 of the staff uses the computer. We have formulated a committee and slowly more staff members are using info from the computer. (Survey, practitioner)

So exciting. So powerful! It's not just used by a few. The network has connected with everyone. We read and ask and go to it as a source of information, . . . use the notebooks, . . . get engrossed. (Interview, teacher)

Variation in activity across sessions. Paper activity varied widely across the sessions. (Refer to Table 1 for details.) The highest volume of activity occurred in Curriculum-Resource (36% of the papers analyzed) and the lowest in Assessment-Sources and Classroom Organization (each comprising 5% of the papers analyzed). Although Instructional Strategies-Whole Language appears to have low activity, as well, paper activity was actually proportionately higher, since the session was in existence only the final three months of the period being analyzed.

In three of the sessions, ASSESSMENT/SOURCES, AT-RISK-STU/ALL-LEVELS, and RESTRUCTUR/SITE-B-DEC, the number of researcher papers exceeded or equaled the number of practitioner papers. Variations in the proportion of practitioner papers to researcher papers may be influenced by several factors including (a) practitioner desire to receive information about "new" areas of educational focus (e.g., authentic student assessment, meeting the needs of at-risk students, and site-based decision making); (b) researcher-moderator leadership in their respective sessions; and (c) the style or orientation of the researcher-moderator. (The researcher with the highest proportion of contributions functions more as an information disseminator and is less dialogic in style.)

> *Where researchers are on-line, responsive, sharing and provocative, the dialogue is excellent. Where researchers take a back seat and just monitor and respond, not much is happening.* (Survey, practitioner)

The variation in activity does not have a single explanation. It appears to reflect neither satisfaction nor dissatisfaction by the participants. The Curriculum-Resource Session registered high participation but little conversation; it served largely as a bulletin-board for the listing of materials, resources, and ideas.) Interestingly, the greatest number of participant and researcher concerns about the nature of Network activity and research/practice interaction were registered by the OERI focal participants (practitioner and researcher) in the Curriculum Conference. Yet, when the researcher-moderator proposed a change in sessions (eliminating all previous sessions--PLANS, DEC-MAKING, ADAPTATION, and RESOURCES--and replacing them with DIALOG and BRAINSTORM) in order to increase conversation, the practitioners overwhelmingly voted for the continuance of RESOURCES.

Perceived timeliness and "newness" of topics also appears to increase interest and participation. Papers in RESTRUCTUR--SITE-B-DEC (the site-based decision making session in the restructuring conference) comprised 22% of the papers studied. There were numerous threads of relatively short conversation in this session (see Table 4).

The specificity of a topical session would seem to be a significant factor in helping to focus dialogue into conversation around common issues of interest. Alternative assessment is timely, new, and relatively focused. (Although Table 3 reveals only one extended conversation in the ASSESSMENT-

SOURCES session, this statistic is misleading, because conversation continued in several other sessions.) On the other hand, session specificity in the whole language session did not extend dialogue, but rather provided a forum for the sharing of resources and ideas, not unlike that in the Curriculum-Resources session.

The sufficiency and clarity of session titles is important. Conversation links often extended into other sessions--sometimes intentionally, other times apparently in error. This could limit the development of conversation, particularly where potential participants have not joined all the relevant sessions. More specifically, for this analysis, it renders paper activity difficult to trace. The node-link diagram in Figure 1 illustrates this phenomenon for the discourse around portfolio assessment.

Insert Figure 1 about here

Paper activity does not, of necessity, reflect impact. As an example, practitioner surveys and interviews indicate that the Assessment Conference has been valuable to those who have been merely reading the papers as well as to those who have actually participated in the dialogue. The researcher-moderator has been highly participative and responsive to the participants. Further examination of this scenario through follow-up interviews revealed an important dimension of electronic networking--the invisible non-public interaction that surrounds the visible paper dialogue. The researcher and practitioners involved in this session report significant contact through

messaging as well as correspondence and conference contacts. As Murray (1986) illustrated in a business environment, the visible computer dialogue is but one part of a larger communication system.

Nature of communication. Early Network activity was characterized by a Question/Answer focus. In the month of January 1989, fully 46% of the papers were Requests for information by practitioners. Only 13% included any discussion or sharing of experience. Network participants have become increasingly willing to share their own experiences as illustrations and points of contrast. The Network has matured. As Table 2 illustrates, of the sessions analyzed in this paper, less than 20% were questions or requests, while 22% of the papers represented the sharing of experiences. In the Network's first year, global requests were common (e.g., "Send me any information about [broad topic]"). In general, participants have learned to contextualize their questions and to give information as well as to request it.

Not surprisingly, information requested and shared by practitioners is most often "practical":

> *Practitioners generally exchange "nuts and bolts" types of information regarding everyday classroom activity. We discuss what we're doing in our schools and committees. We describe what works, and to a lesser extent, what doesn't work.* (Survey, practitioner)

> *Practitioners' expectations appear to be for context-specific answers to immediate and highly situational concerns. Researchers vary in their ability or willingness to respond at this level. . . . All very polite--little confrontation or disagreement; the technology is very supportive of ignoring behavior.* (Survey, researcher-moderator)

The following example is illustrative:

> *Our kindergarten class has been asked to decorate an outdoor tree with ornaments reflecting Japanese culture. I'm having trouble finding waterproof ornaments suitable for work with this age group. Does anyone have suggestions?* (Network paper, practitioner)

In addition to "low-risk" sharing and questioning, participants are beginning to experiment with and report new practices. Paper 1 in Appendix A illustrates the outcome of new practices shared over the network--although an outsider might question the extent of reflection in this example, it is a substantial beginning for a faculty militant in its defense of privacy and individual autonomy. (Is this the beginning of a notation of practical wisdom?)

> *We seem to be more comfortable with factual information sharing than discussing issues from several viewpoints.* (Survey, researcher-moderator)

> *At first the papers and messages were "how to's"--now the papers are becoming philosophical and theoretical in nature, too.* (Survey, practitioner)

Twenty-two percent of the papers in this analysis were coded either Ip or D (the papers in these categories nearly equally distributed between practitioners and Researchers). Reflection requires taking and examining stances. Network content is exhibiting a shift toward more open and inquiring dialogue. See Papers 2, 3, and 4 in Appendix A. Paper 4 is particularly interesting because it illustrates a reflective link to a conversation about separate and connected knowing in the THINKING conference. Although, in the words of one of the researchers, most practitioner reflections appear to be

more "remembering" than "conceptualizing," a change has taken place for at least some users.

In order for reflective dialogue to occur, dialogue itself must be present. Characteristics of the software, PSInet, make it difficult to follow threads of conversation and thus to engage in dialogue. Papers arrive in "Incoming Mail" in the order received by the file server. Although papers are identified by session, the computer does not "track" relationships among papers. I was surprised at the number of linkages revealed through my analysis that had escaped me as a network participant.

Table 3 illustrates that at least 230 papers out of the total 540 papers (or roughly 43%) were components of conversations of two links or more. This represents a substantial development from the first year of Network activity in which the bulk of the exchanges were only one link in length and only four were identified which equalled or exceeded 5 links.

Table 3 is, in fact, a crude and grossly conservative account of Network conversation. The term "explicit" is key. Topics which relate logically may lead into one another without any explicit reference in conversation. Figure 2 illustrates the relationship of three sub-conversations (consultants, retreats, and guided imagery) through a node-link diagram of an extended conversation. The connections in these exchanges are less subtle than many.

Insert Figure 2 about here

As mentioned previously, conversations crisscross sessions, both naturally and in error, and may not have been noted in this analysis. Finally, surveys and interviews suggest that responses to papers often take the form of messages, telephone conversations, correspondence, face-to-face conversations at conferences and even site visits. Virginia Heckel's paper in this symposium illustrates this phenomenon.

One of the longest visible exchanges on the network (20 papers) occurred in the CURRICULUM-RESOURCES session over the summer months in response to a query from a high school science teacher. It included critical, reflective thoughts and grounded practical ideas for resources and activities. Five of the papers are reprinted in Appendix B.

The conversation began with a paper explaining the situation of the science teacher who had been assigned to teach 9th grade Earth science to several sections of at-risk, low-achieving, and mainstreamed students. She described the current course and class structure which she believed was not meeting the students' needs and asked for suggestions from the Network community. She explained several of her ideas as starters for dialogue (Appendix B-Paper 1).

The second paper in the series demonstrates skillful network facilitation and stimulation by the researcher-moderator (Paper 2). The original practitioner connected with a teacher on the opposite coast and engaged in idea exchanges which included the plan for continued collaboration. The comment, "There aren't a lot of native rocks in this part of Florida . . . We

have a lot of sand/not many rocks" led to a rock exchange by participants across the nation.

This elongated exchange was unusual in that the primary participant included message-like communications as papers, thus providing a window to the types of human linkages that appear typically to occur in messages. Indeed, thank-yous revealed that she received rocks from at least four areas: Massachusetts, Minnesota, California, and Washington state.

Is this an example just the "nuts-and-bolts" practical idea swapping that practitioners have always engaged in, or is it something special? Does it represent the notation of practical wisdom? Is it in any way indicative of reflective thought? Perhaps the "reflective power" of this Network lies in the revelation of issues embedded in everyday practice. Clearly the original paper was stimulated by reflection on the purposes of studying science and a concern for equity. The researcher-moderator encouraged this thinking with his lead-in to a paper in which he also shared practical ideas and resources (Paper 4).

This conversation reached and interested others beyond the primary participants, and indeed, others beyond the Network. A practitioner (not otherwise involved in the dialogue) used the series of papers to illustrate professional collaboration through networking in a presentation to policymakers. She wrote:

> *One of the most engrossing conversations I have found recently on the Network was the one about "Rocks." It was especially representative of what we do because it contained a specific need (rocks), a targeted group (at-risk students), a pedagogical base (beginning science) and was addressed by practitioners, researchers, and MIL staff. It included*

> *experience, opinions, theories, research, and references. . . . Your words did much more than I could ever have done to demonstrate what a powerful tool PSInet is and what a strong community has been forged through it.* (Network paper, practitioner)

A major factor in establishing and continuing conversation appears to be the manner of facilitation and moderation. Although facilitation is being accomplished by a small group of active and reflective practitioners, for the most part, this role has fallen to the researcher-moderators who appear to have different styles. Figure 3 illustrates the manner in which one researcher used a dichotomy between theoretical and practical orientations to characterize differences in interaction between practitioners and researchers

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Insert Figure 3 about here

From a content perspective, styles of moderation and response might be arrayed imperfectly on a grid created by the intersection of two continua--one representing a progression from strict information provision, through interpretation and exemplification, toward deliberation; and the other continuum representing the contrast between a more abstract theoretical approach and a grounded practical approach. (See Figure 4.)

Insert Figure 4 about here

Several of the researchers are particularly adept at posing contributions in a manner to stimulate thought, modeling deliberation on issues, and encouraging and responding to the sharing of practice (sometimes even

sharing their own past practices). Papers 2 and 4 in Appendix B (the "rock" conversation) are illustrative as are papers 1 and 2 in Appendix C.

> *I think much of the chatting that we have done at times has helped us to develop a mutual language. our Researchers do not sound dull--the material is interesting. They seem to take some bit of information they are aware of and fit it to what the practitioners are trying to do.* (Survey, practitioner)

Some interactions with Researchers have reinforced the network principle that practitioners are an integral part of the knowledge-seeking process and have contributed to the sense of colleagueship among all educators on the Network. Paper 3 in Appendix C is an explicit example of a researcher-moderator's invitation to join in inquiry.

The examples cited previously and comments by the practitioners illustrate the importance of active moderation and the potential significance of the nature of that moderation.

The Network as a Medium for Reflective Discourse

Applying Boud, Keough and Walker's (1985) definition of reflection, network conversation clearly has been purposeful, intentional, self-organized, and revealing both affect and cognition. A crucial distinction is whether reflection (for our purposes the visible indicators of reflection) is an individual activity or if it can be demonstrated by two or more individuals collectively. As the Researchers' comments suggested, conversation is courteous. There are relatively few papers that, individually, demonstrate questioning and grappling with issues from multiple perspectives--the reflective soliloquy. Yet, across strands of conversation, multiple perspectives are presented, issues are often embedded, and sometimes the researcher-

moderators or particularly reflective practitioners make these issues explicit. The conversation on this network is starting to develop reflective conversations. Still another way to think about the reflective potential of the Network is to view Network papers as reflective stimuli for dialogue among faculty (whether or not they actually interact with the Network computer).

In the concluding chapter to a collection of essays about developing reflective practice, Houston and Clift (1990) formulate seven working hypotheses about the relationships among reflection, inquiry, and the education of teachers. Although focused primarily toward teacher education, their hypotheses apply or have analogues in this examination of Network dialogue. Consequently, I have elected to use the hypotheses as an organizing framework for my observations about the Network as a medium for reflection.

Hypothesis one. **"Current definitions of reflection are strongly influenced by the Western cultural heritage, which emphasizes analysis and problem solving as opposed to negotiation, contemplation, or enlightenment"** (Houston & Clift, 1990, p. 211).

The School Renewal Network functions variously as a source of information, a data base, a forum for exchange, and a forum for dialogue. Not all participants recognize or participate in all functions, however. Many still view the Network as a one-way information conduit, a data base of "given" information rather than an interactive resource. There is evidence that new users tend to view the network as a one-way information conduit, no matter at what point they join the Network community. (Global requests have once

again become more frequent with the addition of new users this year.) Participation in dialogue and information sharing grows with experience and comfort level.

As illustrated previously, Network dialogue is increasing. Some is quite contemplative in nature and--in contrast to most papers--transcends standards of utility, validity, and immediate classroom application.

> *Most sustained dialogue is around issues that go way beyond education in schools--Women's Ways of Knowing, spring, war, peace. Isn't this interesting?* (Survey, researcher-moderator)

The number of participants in these dialogues are relatively few. Although there has been no explicit criticism of these conversations over the network, one network coordinator wrote on the survey:

> *The quality of the content varies . . . some practitioners seem to be using the network as their own personal/daily journal for their thoughts and opinions. I'm not sure this isn't another form of gentle persuasion.* (Survey, practitioner)

Personal epistemologies may be a factor regardless of experience. Western rationalist (if not authority-oriented) thinking may be reflected in the analysis of the coordinator who described Network content as "mostly opinions, not valid info."

To what extent tolerance for and participation in exploration and contemplative dialogue is developmental or indicative of "world view" is unclear. It is for most (practitioners, at least) a new experience. Some have expressed exhilaration in the new dialogue. One of the researcher-moderators

rewrote a rather linear description of the network to reflect the spirit of collaborative exchange:

> *The dialogues and conversations between researchers and practitioners generate ideas which inform both parties' knowledge base. The network fosters and promotes collaboration and collegiality in an innovative and non-hierarchical manner.* (Network paper)

Hypothesis two. **"Programs attempting to develop reflective practitioners are enhanced through freedom and empowerment"** (Houston & Clift, 1990, p. 213). **NETWORK ANALOGUE: Reflective and deliberative dialogue on the Network are enhanced as participants feel empowered and discover their voice.**

Network conversation during the first year was universally "safe." Practitioners are beginning to transcend their cultures of isolation and find voice in the larger professional community. Risk-taking comes slowly, though. One network coordinator wrote about the teachers at her site:

> *There are a lot of questions being asked, not as much sharing of what people are doing. I think it may be the fact that teachers underestimate the power and importance of what they do.* (Survey)

For many practitioners, reluctance to share with one another was eclipsed by their awe of "researchers."

> *Prior to Boca there seemed to be a fear of "writing" where researchers could see it and be critical. Now I think the practitioners realize how easy it is to dialogue with the Researchers and how caring they all are.* (Survey, practitioner)

Our network experience suggests that practitioner "voice" is essential for the linking of or, in less linear terms, the interaction of research and practice.

> *I understand all the problems that teachers have--under the circumstances, only the most dedicated, confident, and competent can be persons, professionals, and hackers. There aren't enough who are confident*
> *. . . They are the experts, and they must come to understand that and act on it.* (Personal communication, researcher moderator)

Network facilitation, largely though not exclusively, by the researcher-moderators, has modeled, recognized, and encouraged reflection and voice.

Hypothesis three. **"Reflective inquiry-oriented teacher preparation programs require more time than other types of programs"** (Houston & Clift, 1990, p. 213). **NETWORK ANALOGUE--Reflective inquiry-oriented dialogue on the Network requires a significant time commitment of its participants (both on and off the Network)--time which is not currently part of their jobs.**

Throughout the duration of the School Renewal Network, "time" has been cited as the greatest barrier by all Network participants. For practitioners, time for managing the network, distributing information, facilitating faculty involvement with the Network, and entering information via keyboard must be added to the time required for thought and reflection. Active network participants have made a significant time commitment.

> *I scan through papers that I think, gee, I should respond to, but I just don't have a lot of time. You know--if I don't need it in the next 15 minutes . . . !* (Interview, practitioner)

> *[There is] nowhere near enough time to seriously consider what I should be doing . . . to gather and report . . . to respond . . . to reflect on the information I do provide and tailor it . . . . Every problem is at least a twenty-parter and each part is a dilemma.* (Personal communication, researcher-moderator)

It is noteworthy that some of the most extended, challenging, and/or reflective conversations (e.g., the "consultants/guided imagery" and "rocks" conversations described earlier) and occurred during the summer months when practitioners who had taken workstations home had time to think and respond.

Moderation and facilitation have been crucial to the progress the School Renewal Network has made toward productive and reflective dialogue. At least until reflection becomes a characteristic of teaching professionals and the cultures of their schools, support for reflective activity--support in terms of time, personnel, and resources--will be necessary. This is no less true of electronic networking with reflective activity as a goal.

Hypothesis four. **"Community and tradition enhance reflective activity"** (Houston & Clift, 1990, p. 214).

Network participants repeatedly emphasize their sense of community with their cohorts across the nation. This sense of community breeds trust, acceptance, risk-taking, and a sense of common mission.

> *It has brought the feeling of unity with the other schools nationwide. Our fears, we find, are shared with the other schools nationwide. Our concerns are shared nationwide. It's not just us. We are not alone. There seems to be more room for risk taking now, also.* (Survey, practitioner)

Community has, for many participants, linked the worlds of research and practice and enhanced dialogue.

> *It seems, more and more, that practitioners and researchers meet on an equal footing, each realizing that they have both questions and answers, concerns and tentative solutions. We meet as friends with common areas of interest and varying degrees of*

> *experience and expertise. The "ivory tower" image has faded. The researchers no longer seem to feel that they have to produce the perfect response to each situation. We've all become a lot more human AND friendly.* (Survey, practitioner)

Researchers and practitioners, alike, have emphasized the importance of the face-to-face contact and time on the Network to build community. Two conferences, dubbed "Boca 1 and 2," brought users face-to-face and greatly enhanced interaction.

> *Boca I and II were necessary, as is Boca III in the future, to keep us a family so that we talk to one another instead of simply write.* (Survey, practitioner)

Other strategies to personalize and build community have included the exchange of participants' photographs on postcards.

> *I like displaying them [the postcards] on the wall above my workstation . . . They really do enhance my feeling of connectedness to other network people.* (Survey, researcher-moderator)

We are currently contemplating the implications of community and intimacy for new and old users on a growing Network. Although we have found that a critical mass of participants is necessary to create and sustain network activity over time, some have remarked that the volume of papers has now become too large and the number of users too great to maintain community.

A second facet of community is critical in this Network--community within the cultures of the individual school sites. Network data suggests that collegial cultures at the school site greatly enhance Network impact and that impact is minimal in sites without such cultures. The amount of Network

activity at a given site may not accurately reflect impact on the site as a whole.

This observation can be corroborated by contrasting the interview responses and MIL documentation data from the two school sites with the greatest overall paper activity. The Network coordinators at both sites are committed and inquiry-oriented. Both have actively distributed papers to faculty members and sought the involvement of others. At one site, the entire faculty is engaged, reflectively examining the commonplaces of their school and planning responsible and systematic change. The Network is viewed as an integral resource. Although faculty at the second site engaged in shared decision making and planning for school change, they were divided and mistrusting. The coordinator's efforts to include others have been perceived by some faculty members as controlling behaviors.

A similar contrast is documented for the pair of user sites next highest in use. The success of the Network in stimulating reflection is interactive with the development of invisible and visible colleges.

Hypothesis five. **"Breadth of knowledge improves both the process and the outcomes of reflective inquiry"** (Houston & Clift, 1990, 215).

This is a foundational Network assumption. The content analysis of Network papers suggests that dialogue improves when it is integrated with information; yet, the presence of information alone does not guarantee the processes or outcomes of reflective inquiry. The breadth and scope of the Network may negatively impact depth by diminishing focus.

> *Sometimes the exchanges seem too scattered, too surface. There has to be encouragement to get deeper rather than broader. Round robins should be encouraged.* (Survey, researcher-moderator)

Hypothesis six. **"Depth of content knowledge enables teachers to reflect upon their students' understandings of subject matter and therefore their ability to adapt instruction to meet students' needs"** (Houston & Clift, 1990, p. 216).

> *I see growth in both the depth and breadth of interactions. . . However, there is still insufficient response from most practitioners on how information is being used and its effect on teaching/learning in the schools.* (Survey, researcher-moderator)

As Table 4 illustrates, topics of conversation tend to be strategy- or issue-focused rather than content-focused. Although many of these topics are germane to instructional decision making, practitioner's survey-ratings of the impact of Network information on students were low. A follow-up conversation with one respondent leads me to hypothesize that the question may have been misinterpreted; nonetheless, analysis of Network dialogue to date yields less evidence of impact in meeting student needs, particularly in terms of content understanding, than we hope it eventually will.

Hypothesis seven. **"Programs that promote reflective thinking cannot rely on a single set of prepackaged experiences"** (Houston & Clift, 1990, p. 217). **NETWORK ANALOGUE: Computer networking is not a panacea for the development of collaboration and reflection.**

The Network can enhance dialogue and reflection, it can have negligible effects on reflection and communication, or it can hold negative and unexpected consequences.

> *I've seen schools build new programs, try new processes using Network information as a primary resource--I've seen this done by individuals, teams, and by whole schools. I've seen Network information act as a seed to spark the growth of a new idea. I've also seen the Network sit idle and ignored during periods of high stress in a school. I've seen frustration by coordinators in trying to make time for themselves and others to contribute to the conversation.* (Survey, network researcher and consultant)

Figure 5 illustrates the possible path for a given piece of Network information. There is no guarantee that a paper will lead to a network response (i.e., a potential contribution to reflective dialogue on-line) and/or reach the consciousness of others in the faculty (i.e., enhance the potential for reflective dialogue face-to-face). Much is dependent upon the time, access, inclination, and facilitation behaviors of the Network coordinator and the collegial relationships among faculty. The shape of the diagram is decidedly funnel-like.

Insert Figure 5 about here

One researcher-moderator expressed a concern which parallels the warning of Newman (1990):

> *The use of computer technology, when accesss to limited hardware is narrow, may contribute to reification of "top down" or "funnel-shaped" (privatized?) leadership structures among teachers.* (Survey, researcher)

This concern could be diminished if all teachers could be networked on a LAN with ready access to individual terminals. In the Central Kittsap Schools in Washington state, this dream is a reality, and teachers are part of the information/decision loop. Perhaps networking is a part of every teacher's future.

The School Renewal Network offers multiple advantages for extending the invisible college, but it is still developing. Its role in the collegium at the school site will necessarily differ, even among highly inquiring and deliberative staffs, depending upon existing structures and processes for reflection and collaboration. (The two practitioner papers in this symposium exemplify contrasting cases.) The Network is only one mode for reflective discourse; it must be considered as part of a total communication system and must evolve to meet the needs of its constituents.

The Network as a Medium for Notation-The Invisible College

What does the wisdom of practice look like? Shulman (1989) has suggested some of the forms it may take, but 'how will we know it when we see it?'

We have compiled series of papers such as the extended dialogues around rocks/teaching earth science to reluctant high schoolers, the ruminations about Spring, and consultants/retreats/imagery described earlier in this paper. These certainly illustrate interesting journeys of thought. Clearly, they demonstrate the interaction of collegial professionals and model to others what a deliberative interchange can look like around complex

educational and sometimes the moral/ethical issues embedded in everyday practice. But is this the notation of practical wisdom?

During the summer of 1991, a working group of practitioners and researcher-moderators from the Network will face the task of compiling and synthesizing Network dialogue into products for dissemination as an outcome of OERI support. We are beginning to wonder if the attentions of practitioners--the questions they ask about the pressing and dominant issues of the day may be as important as the content documented. Are these questions which have developed in an interactive, knowledge-rich environment an expression of the wisdom of practice? Is the wisdom of practice, of necessity, dynamic?

We suspect that, at the end of a two-year funding period, any conclusions will be tentative at best. Perhaps an analogy is in order. The Gutenberg press has been extolled as the device that brought literacy to the masses; yet, in reality, it was a turning point, a stepping stone. It has been a long way from the Gutenberg press to desktop publishing, not only in terms of publishing technology, but in terms of access, cost, literacy, labor, and more. Networking may indeed provide the medium for the notation of practice. We may be witnessing a turning point in the notation of practice, yet its potential is barely tapped.

<u>The Network as a Medium for Notation-The Visible College</u>

According to the ragged dictionary at my desk, Webster (1973, p. 785) defines notation as a "system or set of marks, signs, figures, or characters." Using this definition, one would expect that the notation of practical wisdom

requires written codification. I submit, however, that another perspective should be considered. The root word of notation is note, and the first two definitions read, (a) "to notice or to observe with care" and (b) "to record or preserve in writing." If we combine these definitions and place our emphasis on the verbs "to record" and "to preserve" rather than the modifier "in writing," we can begin to consider new possibilities. Again, we may need break with our Western notions of scholarly legitimacy and examine non-written recording and preservation. There are numerous cultures with rich traditions of oral history. Perhaps there is a role for the Network in stimulating the collegial dialogue at the school site leading to the oral transmission of rich, reasoned, context-specific body of practical wisdom that integrates with individuals' content-specific personal practical knowledge in an inquiry-rich environment. In this interpretation, notation is seen as the explicit and public articulation of a history of practice--the continually evolving "core" of common practical knowledge in a professional culture. Here context-specificity is a hallmark rather than a detriment. This practical wisdom both informs and is informed by the more general dialogue on the Network.

In Conclusion

The web of Network interaction and impact is a complex one, indeed. One of the researcher-moderators ruminated at length about the frustrations and limitations of our endeavor and then concluded:

> *What's right? A huge number of things. Real communication between teachers and researchers, a strong sense of camaraderie, research results being used in schools and classrooms, important*

issues being discussed from multiple viewpoints in all their complexity and producing a deeper understanding by all of us about the nature of the education beast. (Personal communication, researcher-moderator)

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Table 1

Level of Participation: Number and Percentage of Papers by Session and Participant Category

Conference/ Session		Participant Category									
		P		R		RM		S		O	
	Total	n	%	n	%	n	%	n	%	n	%
ASSESSMENT/ SOURCES	28	13	46	15	54	11	39	0	0	0	0
AT-RISK-STU/ ALL-LEVELS	80	28	35	44	55	37	46	7	9	1	1
CURRICULUM/ RESOURCE	193	105	54	40	21	1	0	43	22	5	3
INSTR-STRAT/ OTHR-MODELS	65	34	52	22	34	7	11	8	12	1	2
INSTR-STRAT/ WHOLE-LANG	27	15	56	9	33	0	0	3	11	0	0
RESTRUCTUR/ SITE-B-DEC	119	54	45	53	46	31	26	11	9	1	1
SCH-CR-ORG/ CLASSRM-ORG	27	19	70	7	26	3	11	1	4	0	0
7 Sessions Combined	539	268	50	190	35	90	17	73	14	8	1

Explanation of abbreviations:
P--practitioners
R--Researchers (as a group)
RM--Researcher-Moderator (a subset of R; the specific researcher assigned to the conference)
S--NEA Staff
O--Others

Table 2

Nature of Participation: Number and Percentage of Papers by Session and Paper Category

Conference/ Session		Paper Category									
		R/Q		Ir		Ie		Ip		D	
	Total	n	%	n	%	n	%	n	%	n	%
ASSESSMENT/ SOURCES	28	6	21	9	32	9	32	4	14	7	25
AT-RISK-STU/ ALL-LEVELS	80	13	16	52	65	9	11	0	0	5	6
CURRICULUM/ RESOURCE	193	28	15	85	44	38	20	22	11	8	4
INSTR-STRAT/ OTHR-MODELS	65	17	26	17	26	15	23	5	8	13	20
INSTR-STRAT/ WHOLE-LANG	27	5	19	16	59	4	15	0	0	2	7
RESTRUCTUR/ SITE-B-DEC	119	21	18	39	33	33	28	1	1	46	39
SCH-CR-ORG/ CLASSRM-ORG	27	7	26	7	26	11	41	0	0	5	19
7 Sessions Combined	539	97	18	225	42	119	22	32	6	86	16

Explanation of Abbreviations:
R/Q--Requests/Questions for specific information, assistance
Ir--Information-resources (Procedures, resources; often citations and/or decriptions of published materials)
Ie--Information-experiences (Descriptions of first-hand experiences or practices)
Ip--Information-perspectives (Explicit declarations of perspectives on a topic or issues)
D--Deliberative discourse

Table 3

Evidence of Conversation through Explicitly Linked Papers: Frequency of Conversations by Number of Links by Session

Conference/ Session	Number of Links in Conversation							
	2	3	4	5	6	7	8	10 or more
ASSESSMENT/ SOURCES					1			
AT-RISK-STU/ ALL-LEVELS	2		2					
CURRICULUM/ RESOURCE	5	3		2	1			2
INSTR-STRAT/ OTHR-MODELS		2	1		1	2	1	
INSTR-STRAT/ WHOLE-LANG		1						
RESTRUCTUR/ SITE-B-DEC	2	2	1	2	1	1		1
SCH-CR-ORG/ CLASSRM-ORG		1		1	3			
7 Sessions Combined	13	6	4	8	5	1	1	3

Note: A conversation of one link would consist of an initial paper and one response (i.e., two papers).

Table 4

Network Content: Strands of Conversation by Session

Conference	Session	Content Strands
ASSESSMENT	SOURCES	portfolio assessment peer assessment (sharing of assessment resources)
AT-RISK-STU	ALL-LEVELS	transitions to secondary school special ed summer programs motivation mainstreaming retention extending school year (extensive sharing of research perspectives, programs, and strategies)
CURRICULUM	RESOURCE	Earth Day/ecology "Spring" teaching Earth Science--"rocks" global and multicultural education Foxfire integrating the arts (extensive sharing of resources and ideas from multiple areas of the curriculum)
INSTR-STRAT	OTHR-MODELS	whole language strategies and resources planning for new session for whole language multicultural strategies tracking special education integration Accelerated Learning (sharing of special programs)
INSTR-STRAT	WHOLE-LANG	(sharing of resources, stratgies, and experiences)
RESTRUCTUR	SITE-B-DEC	teacher empowerment equity/multicultural issues in leadership decision making processes trustbuilding site-based decision making structures site-based decision making models administrators and site-based decision making parents and site-based decision making site-based decision making outcomes key references for restructuring consultants, retreats, and guided imagery (general sharing of site-based decision making experiences, questions, and resources)

Table 4 (Continued)

Conference	Session	Content Strands
SCH-CR-ORG	CLASSRM-ORG	full day/developmentally appropriate kindergarten teaming/partnering in classrooms departmentalization, tracking, ability grouping grouping in the classroom block scheduling class size

Note: Parenthetic information describes general paper themes rather than threads of conversation.

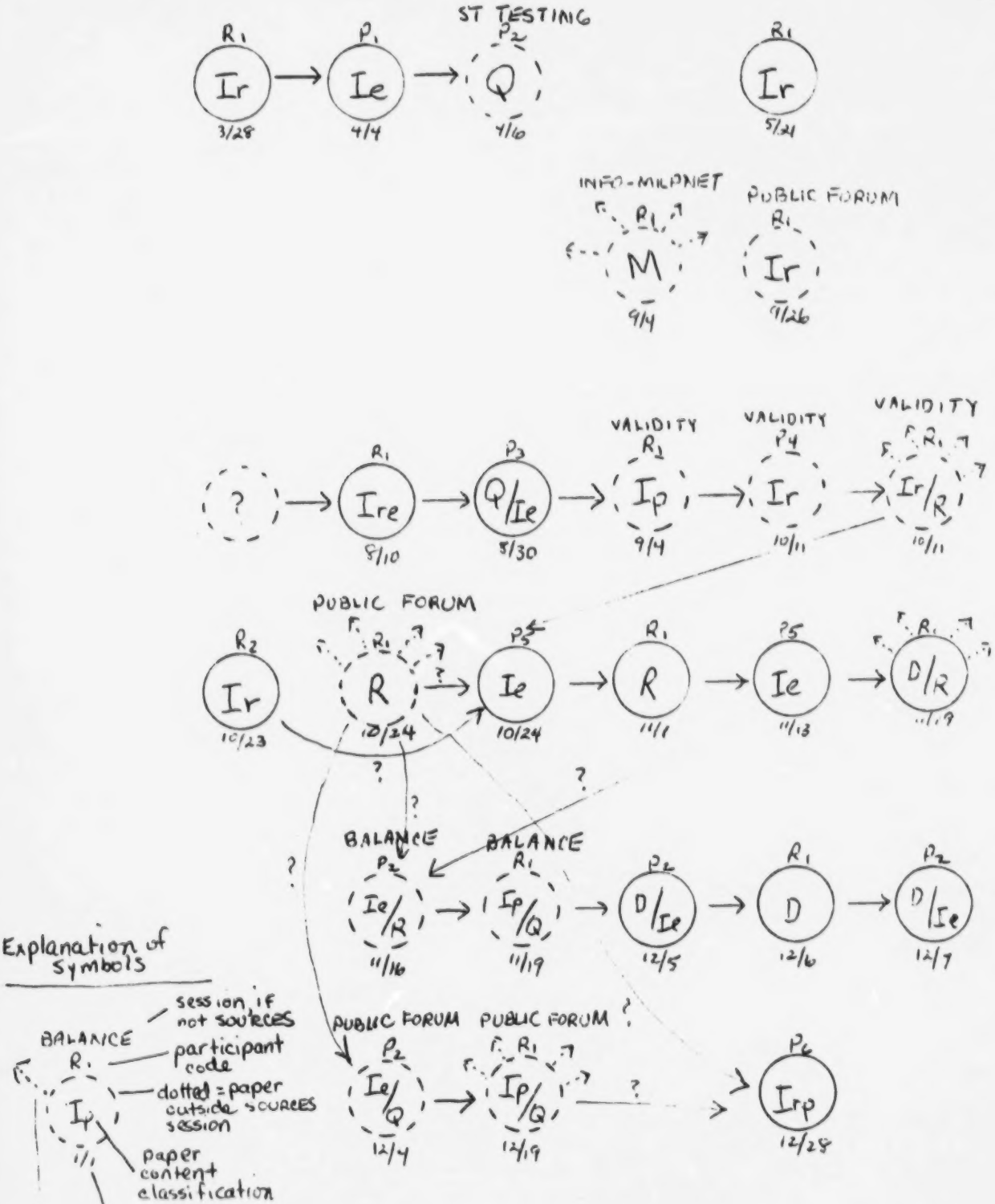

Figure 1
Node-link diagram of papers pertaining to portfolio assessment

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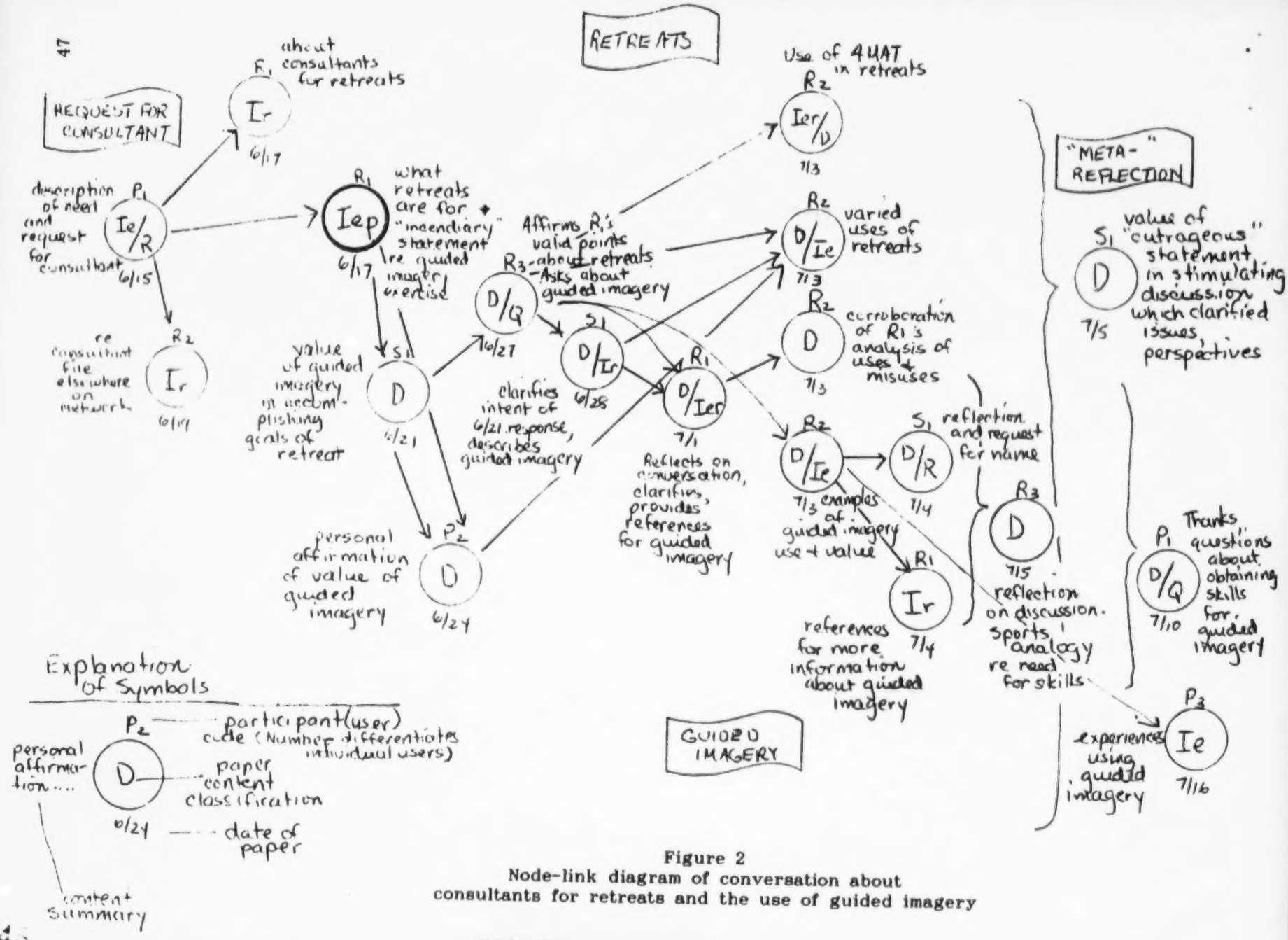

Figure 2
Node-link diagram of conversation about consultants for retreats and the use of guided imagery

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	Rooted-in-Practice Practitioners	Abstract-Thinker Practitioners
Close-to-Practice Researcher-moderators	X	X
Theoretical Researcher-moderators	X	X

Figure 3
A Network researcher's conceptual scheme for characterizing researcher-practitioner interaction

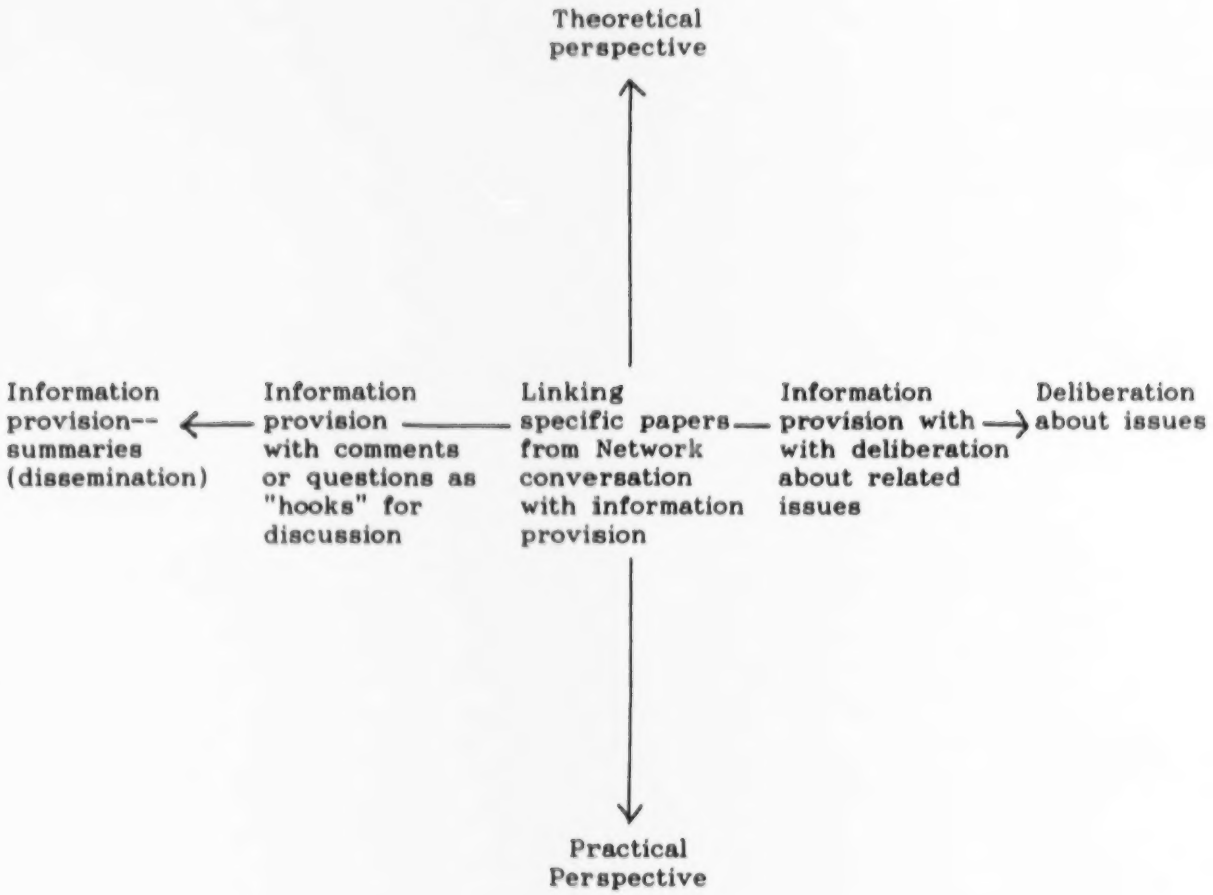
Theoretical perspective
Information provision-- summaries (dissemination)
Information provision with comments or questions as "hooks" for discussion
Linking specific papers from Network conversation with information provision
Information provision with with deliberation about related issues
Deliberation about issues
Practical Perspective

Figure 4
A two-dimensional conceptualization of differences in researcher-moderator style of Network facilitation

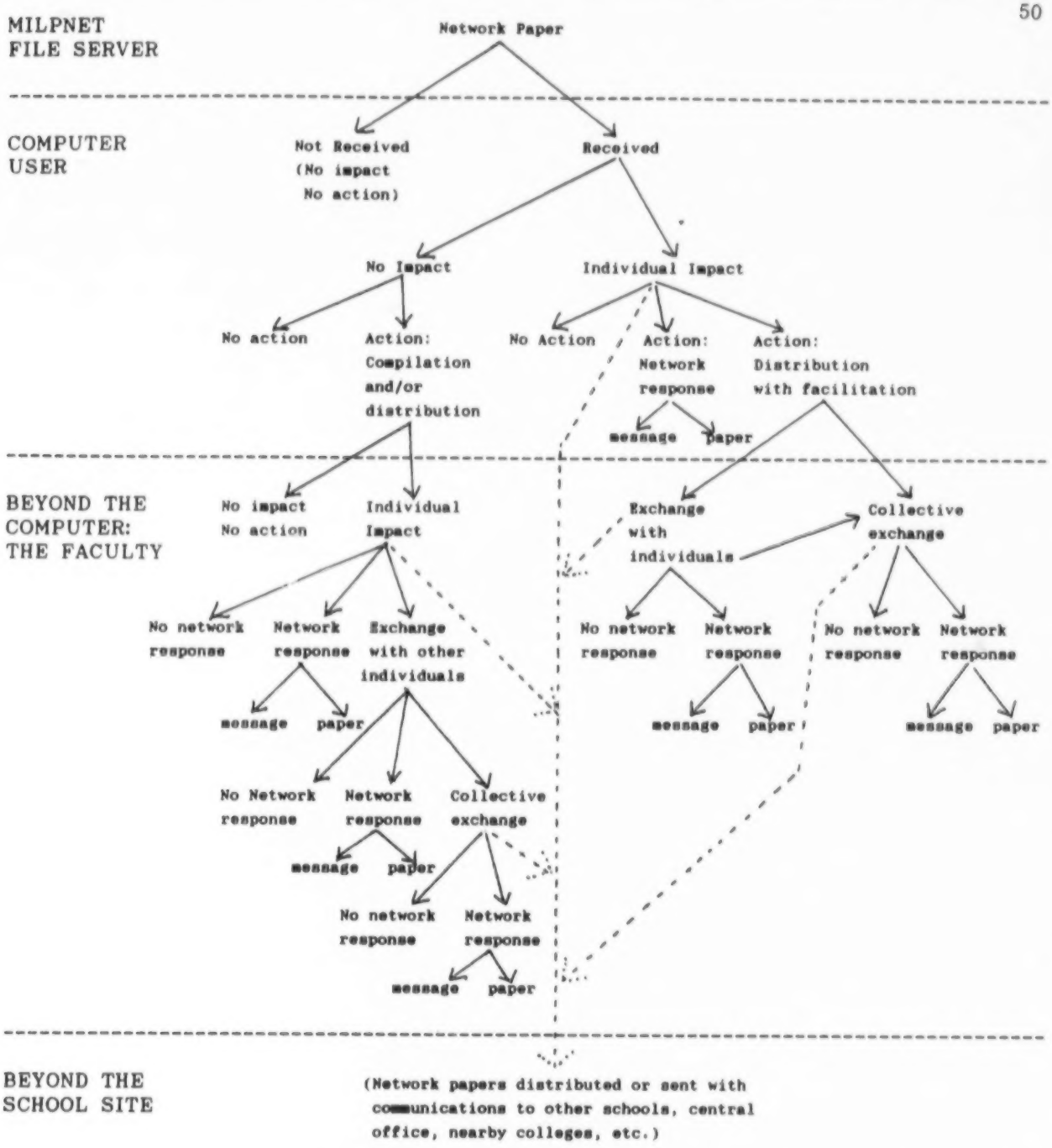

Figure 5
Alternate pathways for a given Network paper at a school site

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Appendix A: Examples of Practitioner Papers Demonstrating Reflection and the Sharing of Practical Wisdom in Progress

Paper 1

##
Paper from server MILPNET, conference RESTRUCTUR, session SITE-B-DEC:
03/01/90 [redacted] @MILPNET "Reflections of site-based decisions meeting
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The following is a copy of the "refelections" of our latest restructuring oriented faculty meetings. It is fashioned after the format of the Wells faculty group processes information received via this network. Thanks, Wells for the great idea. Our staff loves it!

Reflections on the goals staff meeting

In an attempt to develop a school goal the [redacted] Staff met in two meetings.

Using the top concerns gleaned from the Faculty Inventory Survey, the staff chose their top priorities to divide into small groups to discuss the issues. Also discussed were solutions to issues as well as defining terms of issues. As a follow up to this, the next meeting was organized to reduce priorities to vote on the number of goals to strive for and determine what these should be. The overall outcome was one foal---school climate.

The group process was observed and found to be working very well. Unlike the previous group discussion, the participants went right to task. Groups appeared to work well and stay on target.

For the sake of brevity, comments of the groups are divided into sections using the topic as a heading.

It is not the intent of the reflectors to impart personal feelings regarding this activity.

Please take a few minutes to read through the reflections. A copy will be placed in the faculty lounge for your comments. Please feel free to correct impressions or to add your own.

Mary Ellen Segrave-Hunt and Carolyn Michael

READING

Average group size consisted of five to six persons. There was much active participation. Persons who were not vocal in other groups appeared to be more comfortable and actively participating in this group. There was a lot of head nodding in agreement.

(A-1)

CURRICULUM

All participated in the discussions. This was a relatively quiet group with not much enthusiasm displayed. Time was spent in defining terms. The group started consisting of about five persons dwindling to none at one point.

DISCIPLINE

This appeared to be one of the larger groups ranging from three to twelve participants. There was much discussion of issues and many feelings were evident. There was concern for involvement of staff as well as parents over and over. There was concern of consistency for existing rules. There were many questions--not may answers.

COOPERATIVE LEARNING

The defining of terms was discussed. There was thought to be a need for a process enabling students to be able to succeed. There was a good sharing of ideas. Questions were directed to the principal. Groups numbered two and three.

POTPOURRI

These groups numbered from zero the five. Most members were participating. It was observed that not much energy was generated. At one point one member refused to discuss the topic and discussion fell apart. At other times it was stated, "This is something we can't do anything about."

SCHOOL CLIMATE

This tended to be one of the larger groups ranging from four to fourteen. It was expressed there was no communication among the staff. The feeling was "afraid of being put down" or "hurting other's feelings". There was a general feeling of unhappiness of too many meetings, too many committees. There seemed to be a searching for agreement with lots of eye contact. Some positives were mentioned from time to time.

Overall, the groups appeared to run smoothly. Changing from group to group was fast and efficient. A great amount of time was accomplished in a small amount of time.

$$Please note that the Faculty Inventory Survey mentioned in the beginning of this article is not currently on PSINet. The typing of it occured the "old fashioned way" by typewriter. I am mailing a copy to the MILP office in D.C. and one to Doug Fleming who requested it be put on line. If any of you have access to a word scanner and can get it on line that way, I would be happy to send it to you.

$$$

A

Paper 2

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Paper from server MILPNET, conference SCH-CR-ORG, session CLASSRM-ORG:
08/21/90 [redacted] @MILPNET "r) departmentalized elementary"

Dear Waneta and Candi: re)departmentalized elementary

I read with much interest your paper of 8/5/90. I realized that though we don't have 5/6 or 3/4 pods we do have departmentalization within our team grade areas in regard to major subject areas.

My question to you is regarding the ability groupings in math and language arts. Do you find that there is any problem socially or academically in this type of grouping? Is it harder to motivate the "lower" classes?

We know how much easier it is to teach by level and fewer levels. Does that advantage overcome any disadvantages you see to this kind of selection?

We also have tried the 30 min/day for the science/socialstudies/art(in our case). In recent years we have gone to a longer period (50 - 60 minutes) and had each class meet for one week with the science teacher, then one week with the social studies teacher and a third week with the art teacher. There are pros and cons to this, but we found the 30 minutes just too short a time to do some of the projects, especially in science and art.

I would appreciate your thoughts on these questions. Thanks for entering this major paper. It's very helpful.

Jan [redacted]

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Paper 3

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A

Paper 4

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Paper from server MILPNET, conference AT-RISK-STU, session ALL-LEVELS:
07/25/90 [redacted] @MILPNET "Many at-risk seem to have the grwater poten
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Just quickly looking at the stuff coming from Katherine at NWREL a few things came to mind .

1. That successful programs do not necessarily lower standards -- many of my at-risk high school students didn't need lower standerds or watered down material. Many times they are the "brighter" students, the ones who are occassionally sparked by the unusual or thought provocing subject or activity. Many times they are the ones who are bored or at least give that impression. There are other problems involved then their intelligence.

One student I had worked to help support his family from four o'clock to well after midnight every night. He'd fall to sleep in class. I kept urging him on and giving him his assignments early so he could work on them over the weekend. I'd get so frustrated watching this bright young man falling further and further behind. One day the apparent inevidable happened -- he dropped out and all I could think of was why do we always seem to lose the ones with such potential.. About six monthes later as I was giving the final exams, I noticed this well dressed gentleman standing in the doorway to the room. It was the boy who had dropped out. He said, "I wanted to tell you that I kept on and got my GED, I'm registered at JC in the fall and hope to go to Stetson for law. I wanted you to know because you're the only teacher who ever cared." Needless to say I went out in the hall and jumped up and down for joy.

I've been moonlighting in blockbuster video and one of my old students, the one who always kept his noted in paper wads under his dirty gym clothes in his gym bag. It used to take half the testing period to get them out and smooth them into readability before using them for a test. He came in to ask me if he sent an invitation next year i'd come to his graduation from Bethune Cookman College. He said I said the last day of school, " You know Frank, you're smart enough to go to college if you really want to." I don't remember saying it but it stuck in his mind and he did it.

I wonder if some of this couldn't be related to something in the Creative Thinking conference - Women's way of Knowing. Women are so busy getting out in the working world competing, thinking (or trying to) like men, leaving the kids to fend for themselves or shipping them off to boarding schools, latch key, etc. and men are so busy trying to get to the top, only to find out that there's another level to get to. Kids are left to learn morals, ethics, behavior, etc. on their own.

Well, I've rambled again but somehow we've got to reach these students

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Appendix B: Sample Papers from "Rocks" Dialogue

Paper 1

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(B-1)

Florida has another problem not often considered -- very few stones. So when much of the first semester is spent on geology and earth building chapters we have a problem -- you can't send students out for a rock collection -- there aren't any and they do not relate well to rocks or sizes -- describing the views out Cleveland HS windows does not relate!!!

I guess I'm asking for feedback on two fronts.

1. Is this attitude of doing as little as possible for the ninth graders or the lower level classes prevelant in other places? Could it be the reason so many students are at risk? How can you build a building without a good foundation?

2. ANy suggestions on activities -- any of you in the west or northeast willing to exchange rocks for shells, sand, etc.

thanks -- Jeanette -- the computers at home for the summer -- this is fun.

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B

Paper 2

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B

Paper 3

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Paper 4

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Paper from server MILPNET, conference CURRICULUM, session RESOURCES:
07/03/90 DFLEMING @MILPNET "R) Earth Science/Rocks-2"

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4 July 1990

Dear Jeanette @ STPETEHS

I like the way you phrased your mission: " to make my two 9th grade Earth Science classes unique so that the students will want to take more science classes." ("To Debbie and other science buffs," 07/02/90) Do your colleagues share the same sense of mission? Have you discussed the active recruitment and retention of minority students or females in science classes as a department or subject team? Have your colleagues participated in in-service programs like GEESA (Gender/Ethnic Expectations and Student Achievement) or TESA (Teacher Expectations and Student Achievement) ? I have some discussion guides for a science department or course-level team meeting that I will dig out and send to you hardcopy, O.K.? You may want to use these to generate some collective responses to improving enrollments in science classes.

And now, to your individual response. It's been some years since I taught Earth Science, so I'm really "out of practice," but when I try to remember "teaching" a particular lesson, I come up scrambled. Perhaps the best teacher-led classes were those where I drew topographic representations on the chalkboard and invited individual students to come up and sketch what the same representation would look like in profile, and vice versa! Or where I would draw topographic lines and symbols on the chalkboard, then give the azimuth readings to prominent structures or natural features, and say " Where, on this map, would the observer have to be to record these sightings?" I got topographic maps of Lunenburg, Massachusetts from a local sporting goods store (who purchased them from the Superintendent of Documents, United States Government) and had kids find their street, their house, and solve problems similar to those on the chalkboard. We visited Lunenburg Town Hall and looked at the aerial photographs the Board of Assessors uses to ink in the property lines and owner's names. But, to tell the truth, the images that come back to me the most are not so much what I did but rather what we did together! We planned and organized one all day field trip per class, per semester. The first semester focused on rocks and minerals, but the field trip was a mountain climb (Mt. Monadnock, in Dublin, New Hampshire) and since the students would find themselves on top of an eroded, metamorphic anticline laced with igneous intrusions, looking out from the bare rocky summit over the colorful October woods, they darn well needed to know how the rest of the landscape got so flat, why the vegetation changed as they climbed higher and higher, and when the top of the mountain got bald (it's only 3,165 feet or so). And so it was that the process of conducting a field trip folded in (no crustal movement pun intended) learning about fires that were started by early settlers to drive out the wolves who attacked the sheep that grazed on the high shoulders of the mountain, or what peneplanes are, or the concept of ecological zones. Or, for that matter, hypothermia, wind-chill, water-bar and a raft of other concepts and terms. Field trips are scheduled well in advance, but the New England weather isn't. In a dense fog, the word "cairn" takes on a special meaning. To pick your way from one pile of rocks to another, guided safely by these trail markers, is a special experience. The stuff of trail talk and mountain journals and adolescent can-do-it-ness. Everything teaches, and can be a confidence

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builder.

Two other things I remember from "first marking period" are the rock and mineral collections and oral reports. Both involved choices and options on the part of students. I learned so much about my students from the ways they selected, organized, and carried out their assignments - especially since they wrote their own tickets. I remember feeling really freed to help them accomplish their goals, although I didn't use the term "coaching" at the time.

Enough of this rambling! Here are some of my favorite references:

Lobeck, Armin K. THINGS MAPS DON'T TELL US The Mac Millan Company, New York: 1968. This superb reference shows what a region looks like above (like on a map) and below (like a three dimensional model) the surface. See the Forida Arch, an unwarped part of coastal plain, pp 8-9.

Watts, May Theilgaard. READING THE LANDSCAPE OF AMERICA MacMillan Publishing Company New York: 1975. Great for a sense of history and human impact on the environment, and human adjustments to environmental conditions. See the Stylish House- pp 321-345. No mention of the cow chaser's house, but a good jumping off point for comparing/contrasting to Florida architecture.

Shimer, John A. FIELD GUIDE TO LANDFORMS IN THE UNITED STATES MacMillan Publishing Company, New York: 1972 May help in spotting MILP schools in our "geologic provinces," and requesting possible rock samples from school sites.

Lobeck, Armin K. GEOMORPHOLOGY McGraw Hill Book Company New York: 1939 College-level text, but a classic. See the discussion of Florida lakes and sinkholes, pp 142-144; marl and limestone, p 49.

Hope this helps and that others on-line pitch in, too!

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B

Paper 5

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Paper from server MILPNET, conference CURRICULUM, session RESOURCES:
07/25/90 STPETEHS @MILPNET "Debbie -- yes let's cooperate"

To:Debbie
From: Jeanette

Would really like to do some comparative teaching in marine science this year -- perhaps we could also look at the different types of marine communities in the area. What about trading "schoolmade" videos?

Jeanette

PS anything you want from Hawaii NMEA Convention??

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Appendix C: Examples of Papers That Faciliate Dialogue

Paper 1

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Paper from server MILPNET, conference RESTRUCTUR, session SITE-B-DEC:
05/02/90 CREMS @MILPNET "More on Site-Based Management"

To: Lassiter, Kimball, Wells, etc

Re: Site-Based Management

From: John @ CREMS

First I want to give Bill Towner some ammunition re the imposition of a site-based management structure from above. The May 1990 ASCD Update summarizes the comments of Carl Glickman, University of Georgia, at ASCD's annual conference. The summary says:

"...attempts to 'require' school facilities to share leadership in their improvement efforts are becoming more common. 'Across the country, we are now seeing districts and states mandating shared governance. The American tendency to package, simplify, and sell has hit the empowerment movement.' This tendency may have grave implications for the empowerment movement, still in its infancy, Glickman warned. Effective programs to involve teachers and administrators in making important educational decisions 'derive from the collective wisdom of the faculty .... Mandating a uniform model of decision making for all schools is to contradict the very assumptions underlying professional wisdom.'

Second, I want to second Sue W. and Bob's concerns about careful definitions of terms. Shared governance seems to be one key term that gets away from notions of "who has the power." But the structure in Chicago is often described as being a shared governance model, except that parents and community members outnumber teachers and principals on the Local School Committees and have the power to not rehire the principal. Shared governance?

I like Virginia's comments to me about what happened at Lassiter -- basically, teaming brought about the need for teachers to be able to make more decisions, and teacher involvement in making those decisions has been greatly facilitated by a site-based management structure that values their participatory decision making. But the Lassiter model is a function of the people at Lassiter, the way they work together, and the vision they share of the needs of their students.

Given this, as usual, there is no one best structure. In general, the district maybe should mandate that all decisions concerning school operations should be made as close to the school level as possible, but each school must determine the appropriate site-based management structure that fits the specific needs of that school.

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Paper 2

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Paper 3

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Paper from server MILPNET, conference ASSESSMENT, session PUBLICFORUM:
10/24/90 PROJ_ZERO @MILPNET "Portfolios in Use?"

PORTFOLIOS

At Project Zero, we are working in several schools that are exploring the use of portfolios as a technique for documenting student learning. They hope that this type of record-keeping can replace or at least supplement the use of standardized, pencil-and-paper tests.

Is anyone out there is PSI-land also venturing into this new terrain? If so, I would like to hear about it. Write on PSI-net, or just pick up the phone and call me at Project Zero. We'll pay for the call!

Project Zero = 1-800-235-2132

Meanwhile, I will report regularly on what we are finding in our research schools.

YFOC

Joe Walters @ Project Zero

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